

# Introduction to Statistical Methods — Stat 2000, Section 001, Spring 2016

Instructor: Dr. Jürgen Symanzik  
Office: AnSc 313  
Phone: 797-0696  
FAX: 797-1822  
e-mail: [symanzik@math.usu.edu](mailto:symanzik@math.usu.edu)  
Web: <http://www.math.usu.edu/~symanzik/>  
[http://www.math.usu.edu/~symanzik/teaching/2016\\_stat2000/stat2000.html](http://www.math.usu.edu/~symanzik/teaching/2016_stat2000/stat2000.html)  
Office hours: MWF 11:00am – 12:00noon and by appointment.

Classes — Lectures & Rooms: Mo 1/11 – Fr 4/29, 2016:  
MWF 9:30am – 10:20am: Old Main 121

Recitations — Lectures & Rooms: Each Tuesday and Thursday, except Tu 1/12 (Week 1), Tu 2/16 (Mo Lecture instead), Tu 3/8 and Th 3/10 (Spring Break).

- Section 501, TR 8:30am – 9:20am, Family Life 301.
- Section 502, TR 7:30am – 8:20am, Health Phys Ed & Recreation 118.
- Section 503, TR 12:30pm – 1:20pm, Technology 107.
- Section 504, TR 9:30am – 10:20am, Technology 122.
- Section 505, TR 3:00pm – 3:50pm, Health Phys Ed & Recreation 114A.

Names, office hours, and office locations of the recitation leaders will be posted in Canvas.

Text: *Introduction to the Practice of Statistics, Seventh Edition*  
by Moore/McCabe/Craig (2012), W. H. Freeman and Company, New York.  
Order the book from the Web if necessary. Do **NOT** purchase the 8th edition!

Additional Course Material: The Powerpoint slides used in class will be made available in Canvas. It is your responsibility to download and/or print the slides before class.

IDEA Center Learning Objectives:

**Objective 1)** Gaining factual knowledge (terminology, classifications, methods, trends).

**Objective 2)** Learning fundamental principles, generalizations, or theories.

**Objective 3)** Learning to apply course material (to improve thinking, problem solving, and decisions).

**Objective 11)** Learning to analyze and critically evaluate ideas, arguments, and points of view.

Topics:

1. Introduction to statistical concepts.
2. Graphical techniques.
3. Probability.

4. Distributions.
5. Estimation.
6. One and two sample testing.
7. Chi-square tests.
8. Simple linear regression.
9. Analysis of variance (ANOVA).

Course Requirements:

- 0) Prerequisite:** C- or better in MATH 1050 or Math ACT score of at least 25 (Math SAT score of at least 580) within the Math prerequisite acceptability time limit; or satisfactory score on Math Placement Test. Basic computer skills, in particular the ability to access and use the World Wide Web, are highly desirable.
- 1) Class Attendance & Announcements:** You are responsible for all material assigned as required reading and presented in the lectures. It is also your responsibility to read all information in Canvas, in particular the announcements and discussions, as well as all information posted on the public course web site, in particular homework assignments and data sets.
- 2) Recitation Lectures:** In addition to class, you have to register for one of the five recitation sessions. Recitation lectures will be held on 28 days throughout the semester as outlined above.
- 3) Software:** This course will primarily use the *StatCrunch* statistical software package, accessible at <https://www.statcrunch.com/>. Moreover, we will make use of other software and teachware available on the Web on many occasions. In addition to *StatCrunch*, you can use any other statistical software package (such as Excel and R) for the homework assignments. However, you have to understand concepts and ideas for the midterms and the final to be able to do some of the calculations and plots manually. Neither I nor the recitation leaders will be able to provide support for software other than *StatCrunch*.
- 4) Homework:** Assignments will be posted on the Web almost every week at:  
[http://www.math.usu.edu/~symanzik/teaching/2016\\_stat2000/stat2000.html](http://www.math.usu.edu/~symanzik/teaching/2016_stat2000/stat2000.html)  
Homework will be collected in class in the following week. Homework can also be turned in during the recitation lectures prior to the due date. In general, late homework submissions will not be accepted. If you cannot turn in a homework assignment by yourself, ask a friend to turn in your homework assignment by the due date. Your homework assignment must be turned in on paper. Electronic submissions via e-mail or through Canvas will not be accepted.

There are 12 assignments (15 points each). However, only your best 10 homework assignments will contribute to your course grade. Therefore, you can miss to turn in two entire homework assignments without hurting your overall course grade. Homework assignments are worth a total of 15% (150 points) of your course grade.

Most of the homework questions will be graded on a done/not done basis. You may get full points for such questions even if your answer is incorrect. It is your responsibility to

compare your answers with the solutions that are distributed in the recitation lectures. One or two questions from each assignment will be graded with respect to correctness. You may fully answer such a question, but still receive 0 points in case your answer is totally wrong. It will not be announced in advance which question(s) will be graded with respect to correctness.

Be **guaranteed** that each midterm contains **at least one** of the previous homework question. If you like, you may work in groups on the homework assignments. In fact, you are encouraged to do so. However, each person must turn in an individual homework solution sheet. Photocopies are not permitted and will result in 0 points. Identical computer printouts will result in 0 points for everyone with the same printout — so do not share your printouts and make sure to not leave them at a public printer where they can be collected by someone else.

Graded homeworks will be circulated in the recitation lectures. If you prefer that your graded homework does not get circulated in the recitation lectures, please contact your recitation leader by e-mail and let him/her know that you want to collect your graded homework in private.

- 5) **Quizzes:** A short quiz will be given at the end of each lecture when a homework assignment is due. Make sure to bring a calculator to class on those days! Each quiz will consist of one or at most two short questions that are a direct adaptation of a homework question. While the text of the questions remains the same, and therefore should be recognizable for everyone who worked on the homework assignment, the numbers in the questions will be different. You can answer the quiz with your homework solutions at hand, but you can't use the textbook nor any of the slides from the lecture notes. When you work on your homework answers, make sure to copy relevant formulas for each question onto your answer sheet so you will know how to solve the same question again when it is asked in a quiz (but with different numbers).

There are 12 quizzes (15 points each). However, only your best 10 quizzes will contribute to your course grade. Therefore, you can miss to take two entire quizzes without hurting your overall course grade. Quizzes are worth a total of 15% (150 points) of your course grade.

Graded quizzes will be circulated in the recitation lectures. If you prefer that your graded quiz does not get circulated in the recitation lectures, please contact your recitation leader by e-mail and let him/her know that you want to collect your graded quiz in private.

Homework assignments and quizzes are treated independently. You can obtain a score for your homework assignment even without participating in the related quiz. Or you can take a quiz without turning in the underlying homework assignment.

- 6) **Midterms:** There will be two 200 point 50min midterms on Fr 2/12/16 and Fr 3/25/16. In case you miss a midterm (or the final) and want to take a make-up midterm/final, you have to provide a verified document that shows the reason for your absence on the exam day, e.g., if you are sick, see a doctor and let him/her verify your visit. If you can't make the midterm/final due to job-related circumstances (e.g., travel), talk to me in person **before** the exam (I may ask you to provide me with airline tickets and hotel bills in your name). If you have no verified document, there is no way to make up for a missed midterm/final.

In any case, please contact me as soon as possible if you cannot participate in an exam

(best if in advance) and make sure to obtain the required verification document that will allow you to take a make-up exam. Even if you have a legitimate reason to take a make-up exam, be aware that such an exam in general is **more difficult** than a regular exam (as this may originate from a past semester or was prepared by another instructor).

Graded midterms will be individually handed out in the recitation lectures. However, uncollected graded midterms will be added to the pile of graded homeworks and quizzes and will be circulated in future recitation lectures. In case you are not able to collect your graded midterm personally while handed out in the recitation lectures and you prefer that your graded midterm does not get circulated in the recitation lectures, please contact your recitation leader by e-mail and let him/her know that you want to collect your graded midterm in private. You can then pick up your graded midterm from your recitation leader during his/her office hours.

- 7) **Final:** There will be a 2-hour, 300 point comprehensive final exam, on Mo 5/2/16 from 9:30am to 11:20am. Everyone has to take the final exam.
- 8) **Plagiarism and Cheating:** Plagiarism and cheating are not acceptable at any time. This includes turning in the work from somebody else as your own work (such as copying homework solutions from the web or from the solution book that often can be found at amazon.com), and providing or receiving help from someone else during an exam. If you receive help (e.g., for the homeworks) from some other source, you must clearly acknowledge that source, e.g., list the book or web site or indicate that a solution was produced with the help of a friend or tutor. The *USU Student Code of Conduct*, accessible at <http://www.usu.edu/student-services/student-code/>, outlines possible consequences in case of plagiarism or cheating.
- 9) **Americans with Disabilities Act:** If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center, during the first week of the course. Any requests for special considerations relating to attendance, pedagogy, taking of examination, etc. must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative formats — large print, audio, diskette or Braille.

### Important Dates:

**Classes:** There are no classes on Monday 1/18 (Martin Luther King Day), on Monday 2/15 (Presidents' Day), and from Monday 3/7 to Friday 3/11 (Spring Break). The class from Monday 2/15 (Presidents' Day) will be held on Tuesday 2/16.

**Homework posted on Web:** Typically every Friday afternoon or evening between 1/15 and 4/22. Exceptions will be announced in class (12 assignments overall). No new homework assignments will be posted on exam days, i.e., on Fr 2/12 and Fr 3/25.

**Homework due / Quizzes:** Typically each following Friday. Exceptions will be announced in class and due dates (which will also be the date of a quiz) will be listed on each assignment sheet.

**Graded homework and quizzes returned and solutions passed out:** Typically in the recitation lectures in the following week. Graded homeworks, graded quizzes, and solutions will not be distributed in class. If you cannot pick your graded homework and

quiz and the solutions during the recitation lectures, you have to collect these from your recitation leader during his/her office hours.

**Midterms:** Friday 2/12/16 and Friday 3/25/16 (50min in class).

**Final:** Monday 5/2/16 from 9:30am to 11:20am (2 hours).

**Grading System:**

Final	30%	300 pts
Midterms	2 x 20% = 40%	2 x 200 pts = 400 pts
Homework	15%	best 10 x 15 pts = 150 pts
Quizzes	15%	best 10 x 15 pts = 150 pts
Total	100%	1000 pts

**Stat 2000 grades on average are lower than for many other classes. In the recent past, there were on average about 30% of Ds and Fs awarded. To obtain a better outcome, the department just started to offer extensive recitation lectures again. It is strongly suggested to attend those lectures whenever possible to obtain a better grade (or at least a passing grade)!**

The above schedule and procedures in this course are subject to change in the event of extenuating circumstances.